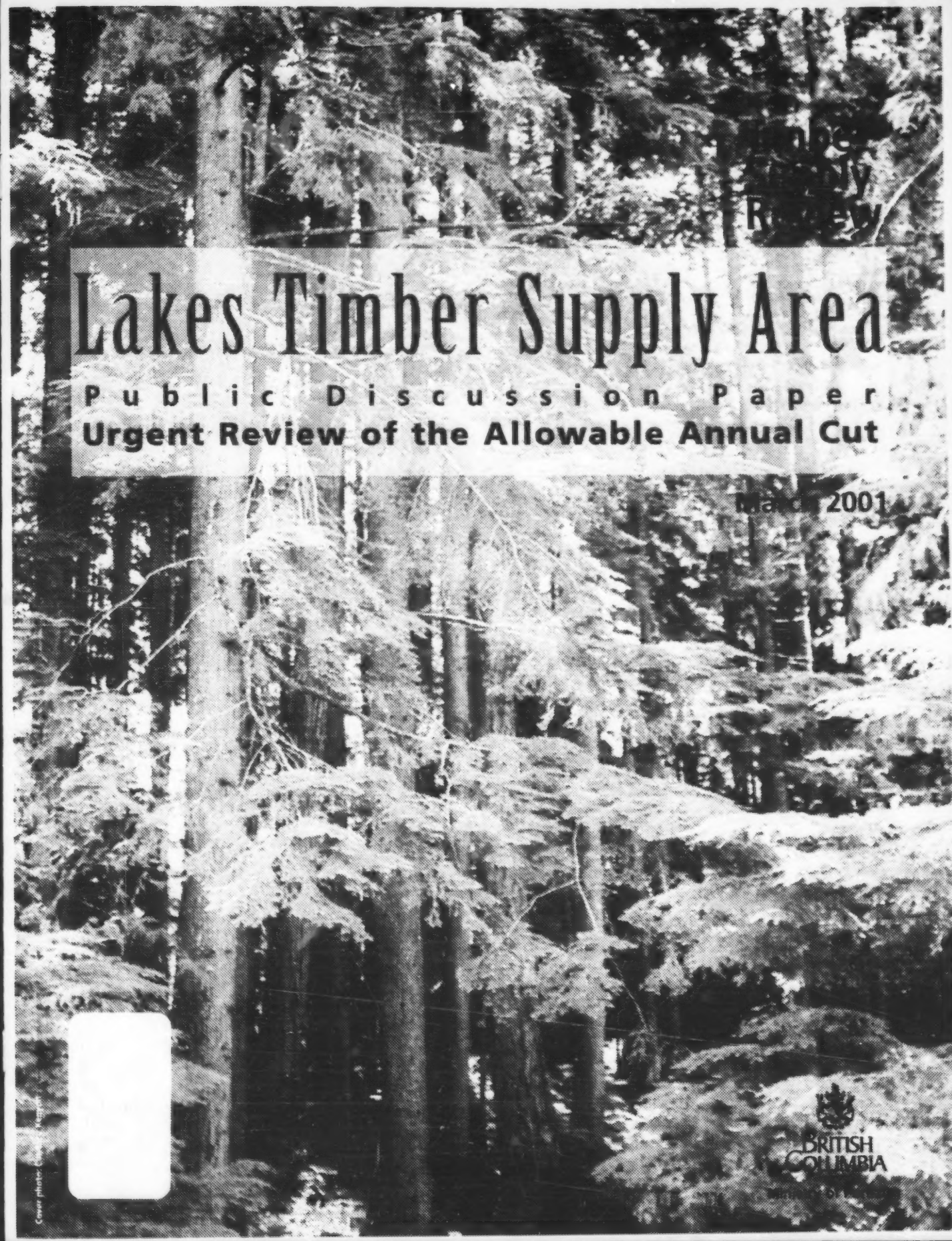


Lakes Timber Supply Area

Public Discussion Paper
Urgent Review of the Allowable Annual Cut

March 2001

BRITISH COLUMBIA

Introduction

The British Columbia Forest Service's chief forester has been requested to consider an increase in the allowable annual cut (AAC) for the Lakes timber supply area (TSA). This request is urgent due to the current epidemic mountain pine beetle (MPB) infestation in the area.

In accordance with the *Forest Act,* Section 8—and under normal circumstances—the chief forester reviews and determines a new AAC for each of the 37 TSAs and 34 tree farm licences (TFLs) in the province at least once every five years. The chief forester's determination is an independent, professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forests when determining AACs.

Urgent Timber Supply Review in the Lakes TSA

The B.C. Forest Service (BCFS) has been preparing for a timber supply review and had planned to release a new allowable annual cut for the Lakes TSA before the end of 2001. However, the MPB infestation has created an urgent need to address the associated forest management concerns immediately.

The objectives of this discussion paper are to provide British Columbians with information regarding the recent timber supply analysis and the request to temporarily increase the AAC for the Lakes TSA, and to provide an opportunity for public review. The timelines for completion of the timber supply review have been modified to permit a 30-day public review period following the release of this report, instead of the normal 60-day public review period.

The chief forester has agreed to review the AAC as soon as possible and therefore a new AAC determination will be released early this spring. The AAC decision will be documented in a rationale and publicly released.

The details of the request for an AAC increase are:

- **Proposed term of increase:** from June 2001 until the next five-year AAC determination is due, or sooner if required.
- **Requested increase:** in addition to the current AAC, approximately 1,500,000 cubic metres per year for the control of the mountain pine beetle and salvage of beetle attacked stands.

In March 1999, the BCFS released a data package and information report for public review and comment. The submissions already received regarding these documents will be provided to the chief forester prior to his AAC determination. Before determining if an increase to the AAC for the Lakes TSA is necessary, the chief forester will review all relevant and available reports, as well as public input.

The public is invited to provide written comments regarding any information contained in this document for the chief forester to consider when reaching his decision.

Public comments will be accepted until 4:30 p.m. on April 23, 2001. A response form at the end of this document will assist you in providing your comments.

Before setting a new AAC, the chief forester will review all relevant reports and public input. The chief forester's determination will be outlined in a rationale statement which, along with the summary of public input, will be available to the public upon release. Following the release of the AAC determination by the chief forester, the minister of forests will apportion the AAC to the various licences and programs.

Description of the TSA

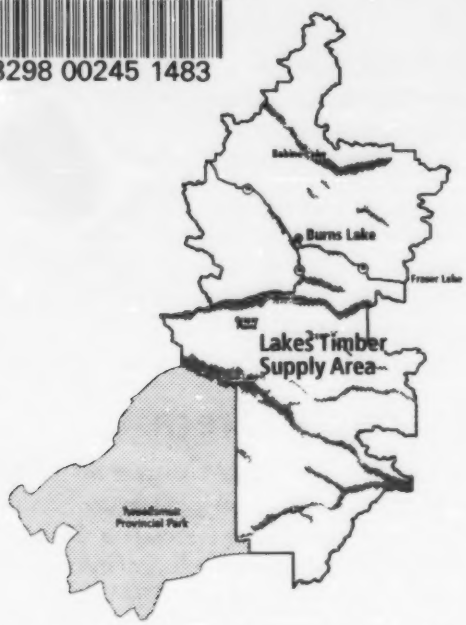
The Lakes timber supply area covers approximately 1.12 million hectares in north-central British Columbia. It extends from Babine Lake in the north to the Entiako River in the south and lies along the northeastern boundary of Tweedsmuir Park. The timber supply area is administered by the Lakes Forest District office located in Burns Lake.

Within this area, approximately 745,000 hectares (about 66 per cent) are productive forest managed by the Ministry of Forests. Of this productive forest, approximately 590,000 hectares are considered available for forest management and harvesting under current management practices.

* *A timber supply area is an integrated resource management unit established in accordance with section 7 of the Forest Act.*

LEGISLATIVE LIBRARY OF BRITISH COLUMBIA
3 3298 00245 1483

101-04429/



The Lakes timber supply area includes the community of Burns Lake and the smaller communities of Decker Lake, Tintegal, Francois Lake, Southbank, Grassy Plains, Danskin, Takysie Lake and Ootsa Lake.

The landscape of the Lakes timber supply area is characterized by rolling uplands and numerous lakes including Babine, Francois and Ootsa Lakes. Almost 10 per cent of the total timber supply area is classified as lake. Recreation and visual resources are important considerations for forest management largely due to the high density of lakes which provide abundant scenic landscapes for both residents and tourists.

There are a number of special habitat management areas such as the ungulate winter habitat, including the regionally and provincially significant Tweedsmuir-Entiako caribou herd and a major share of provincially important moose winter range, the significant grizzly habitat areas of the Sutherland Valley and Klaytunkut Creek, and the caribou migration corridor from Chief Louis Lake to Tetachuck Lake.

Land use planning

The Lakes Land and Resource Management Plan began in the spring of 1994. The planning process provided an opportunity for the public, interest groups and government to make recommendations regarding proposed protected areas and future management of public forest lands in the Lakes TSA and North Tweedsmuir Provincial Park.

The Lakes LRMP was approved by government in April 2000 and is reflected in the Lakes TSA base case forecast (see below).

Socio-economic profile

According to the 1996 Census, the population of the Lakes TSA increased by 18 per cent since 1991 to 6,900. The population of the Lakes TSA is concentrated in the Village of Burns Lake (2,523). By 2005, the population of the area is expected to grow to approximately 7,600.

The unemployment rate in the Lakes TSA in 1999 was about 6.3 per cent, slightly lower than the provincial average (7.2 per cent). The area's economy is not well diversified though, and is heavily dependent on the forest industry with about 43 per cent of residents' income derived from forest-based employment.

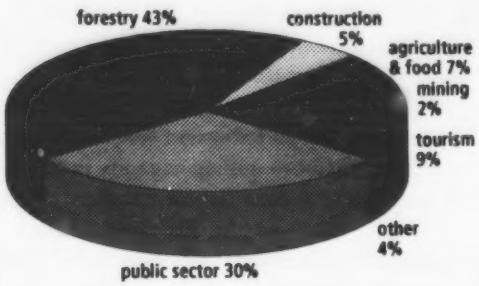


Figure 1: *Total employment by basic sector- Lake TSA, 1996.*

Source: The 1996 Forest District Tables, BC Ministry of Finance and Corporate Relations.

The epidemic—mountain pine and spruce bark beetles

The mountain pine beetle (MPB), *Dendroctonus ponderosae* Hopkins (Coleoptera: Scolytidae), is the most damaging insect that attacks lodgepole pine in western Canada.[1] The insect is a bark beetle, a small, cylindrical insect that attacks and kills mature trees by boring through the bark and mining the phloem—the layer between the bark and wood of a tree.

The area infested by MPB has been increasing within and adjacent to the Lakes TSA over the past 8 years. From 1995 to 1996, the infestation rose to epidemic levels in Tweedsmuir Park and the southern part of the TSA.

As of February 2001, the infestation covers 7,600 hectares and is predicted to spread from south to north in the TSA. Given current rates of spread, Lakes Forest District staff estimate that the total volume of lodgepole pine attacked on the timber harvesting land base could be as high as 19 million cubic metres in the next five years. Within 10 years,

it could affect up to an additional 34 million cubic metres unless slowed by control measures or significantly affected by a severe and cold winter.

The outbreak is expected to last approximately 10 to 12 years and affect about 70 per cent of the lodgepole pine stands on the timber harvesting land base.

There is also an outbreak of spruce bark beetle, similar in its destructive nature, which is affecting spruce trees. An aggressive salvage program in spruce is expected to harvest an average of 430,000 cubic metres per year in the first 5 years and 50,000 cubic metres per year thereafter. This could result in no additional unsalvaged losses due to spruce bark beetle.

Since 1999, most of the current AAC has been directed to the harvest of beetle-attacked lodgepole pine stands. However, projections of MPB spread indicate that this level of harvesting will not be sufficient for future control measures. Lakes Forest District staff estimate that a maximum of 3.0 million cubic metres per year can be harvested based on existing and estimated future milling capacity in the region. After accounting for the spruce volumes affected by the spruce bark beetle, this could provide for a lodgepole pine harvest level of 2.57 million cubic metres per year in the first five years and 2.95 million cubic metres per year in the second five years.

Figure 1 shows the current locations of the mountain pine beetle and spruce bark beetle outbreaks. If the infestation continues at its present rate (worst case scenario), Figure 2 shows the predicted location of the infestation in ten years.

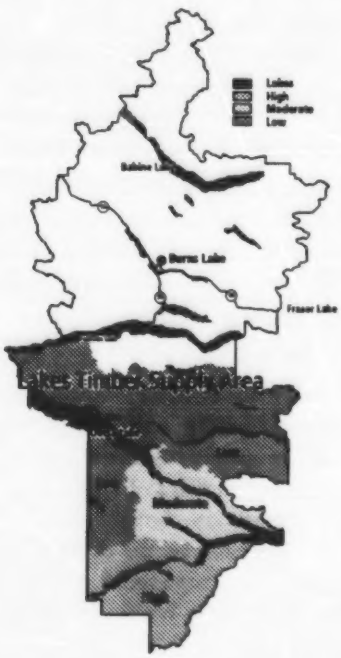


Figure 1.
Current location of the mountain pine and spruce bark beetle infestation, 2001.

Current allowable annual cut

In 1996, the chief forester set the allowable annual cut (AAC) for the Lakes TSA at 1.5 million cubic metres, unchanged from the previous determination.

Since then, several woodlot licences have been created or expanded. The harvest level for the woodlots is removed from the AAC for the Lakes TSA, so the current harvest level attributable to the TSA is 1.462 million cubic metres per year.

Timber supply forecasts

A timber supply computer model was used to project several possible timber supply forecasts for the next 250 years. One of these forecasts is the base case forecast which illustrates the effect of current forest management on timber supply. The base case is not an AAC recommendation, but rather it is one of many sources of information the chief forester will consider when setting the AAC.

The base case forecast is presented in this report for discussion and comparison; due to areas of uncertainty, the AAC determined by the chief forester may be greater or less than the level forecast in the base case. The base case does not incorporate the effects of mountain pine beetle infestation; this is discussed in more detail below under 'Critical issue due to the mountain pine beetle.'

The base case forecast of 1.462 million cubic metres per year (current AAC of 1.5 million cubic metres less woodlots) can be maintained for 11 decades

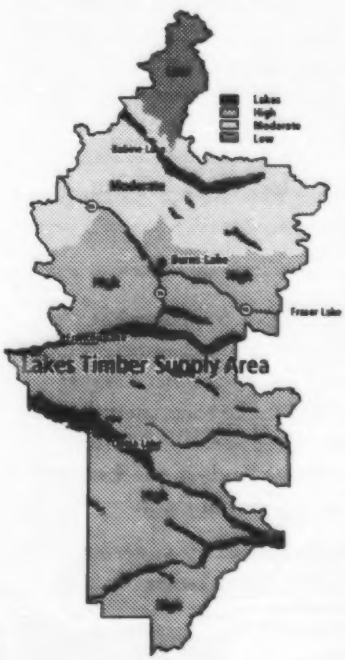


Figure 2.
Predicted location of the infestation in 10 years, 2010.

before increasing to a long-term harvest level of 1.695 million cubic metres per year. In decade 12, the harvest level increases by approximately 16 per cent to the steady long-term harvest level of 1,695,000 cubic metres per year.

The analysis also shows that a steady harvest level of 1,695,000 cubic metres per year can be achieved in the short and long term, without compromising the future timber supply.

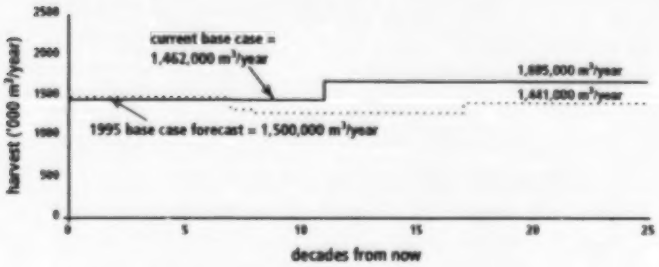


Figure 3. *Current base case and 1995 base case forecasts, Lakes TSA, 2001*

Compared with the 1995 analysis, the Forest Practices Code, the LRMP and the Community Forest Pilot Agreement act to decrease the timber supply, while the results of the site productivity study and the lower minimum harvestable ages act to increase the timber supply. Overall the improved site productivity estimates for lodgepole pine and lower minimum harvestable ages offset the land removals and management requirements of the Forest Practices Code, the LRMP and the Community Forest Pilot Agreement.

Sensitivity analyses

Because forests are complex and constantly changing, timber supply analysts assess how the timber supply forecast results might be affected by issues or uncertainties in the inventory information and management practices. The uncertainties are generally examined through what are called sensitivity analyses, which the chief forester will consider in determining an AAC. The sensitivity analyses are useful for assessing how any changes in information or uncertainties and risks might affect timber supply.

Critical issue due to the mountain pine beetle

A mountain pine beetle outbreak has expanded beyond what was originally predicted for in the base case forecast. This epidemic could expand to consume most of the susceptible pine (53 million cubic metres) over the next 10 years unless slowed by control measures or significantly affected by appropriate weather conditions (severe winter cold). A critical issue analysis examined several scenarios and tested key assumptions.

On the timber harvesting land base, the greater part (450,567 hectares or 76 per cent) of the forest is dominated by lodgepole pine stands. Of that, 67 per cent (302,077 hectares) is considered susceptible to attack by mountain pine beetle.

A worst case scenario was developed based on current rates of spread of the mountain pine beetle. This scenario assumed that the maximum amount of timber that could be harvested and absorbed by markets was 3.0 million cubic metres per year for ten years.

As shown in Figure 4, the worst case scenario has a decline of 35 per cent after the first decade, and a medium-term harvest level of 1,270,000 cubic metres per year.

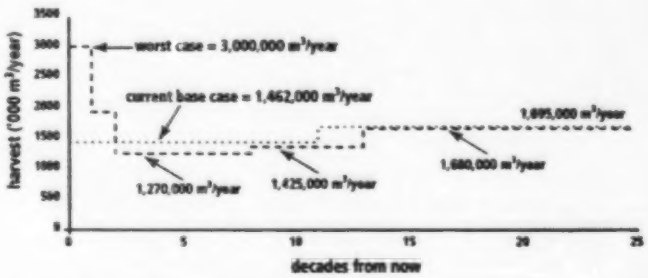


Figure 4. *Worst case scenario for the mountain pine beetle infestation, Lakes TSA, 2001*

Uncertainty in the size of the outbreak was tested by developing a moderate and best case scenario. The moderate scenario examined a reduced rate of spread in the second 5-year period. The best case scenario assumed the outbreak would be stopped by a cold winter in 2001-2002. Compared to the current base case forecast, these scenarios showed a reduced impact in the medium-term, with the best case scenario showing no difference.

Sensitivity analyses tested the impact to the timber supply given several uncertainties about the infestation. A few key uncertainties are the length of time attacked timber could remain merchantable, regeneration assumptions, and the ability of log markets to absorb the increased harvesting levels. If attacked timber lasts for 10 years, medium-term impacts are greatly reduced. If attacked stands regenerate within 5 years instead of 10 years in the worst case scenario, then there is a slight increase in the medium-

term harvest level of one per cent. If harvest levels cannot increase to 3.0 million cubic metres per year, then the medium-term harvest level will drop further compared with the worst case scenario.

Uncertainty in land base available for timber harvesting

Figure 5 shows the sensitivity of the steady harvest level forecast (at 1,695,000 cubic metres per year) to changes in the size of the timber harvesting land base. If the timber harvesting land base increases by 10 per cent, then the harvest level increases by 5 per cent to 1,780,000 cubic metres per year. If the timber harvesting land base decreases by 10 per cent, then the harvest level decreases by 7 per cent to 1,570,000 cubic metres per year.

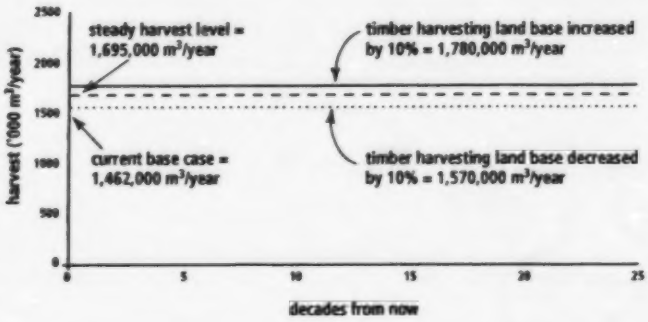


Figure 5. *Uncertainty about the size of the timber harvesting land base, Lakes TSA, 2001.*

Three factors have been identified that might affect the size of the timber harvesting land base. These factors include uncertainty about low-productivity sites, problem forest types (specifically low-height pine stands), and the amount of old-growth management areas required within the timber harvesting land base. Completion of landscape unit planning by July 2002 will verify land base reductions for old-growth management areas.

Uncertainty in site productivity estimates for pine

Most existing lodgepole pine stands in the Lakes TSA are the result of past wildfire events. These stands regenerated with very high densities (i.e., number of trees per hectare), which can affect site productivity estimates.

The steady harvest level forecast includes managed stand densities and improved site productivity estimates. Figure 6 shows the impact of uncertainty about the improved site productivity estimates. If densities are not managed and the improved site productivity estimates for lodgepole pine are reduced by 50 per cent, then the short-term harvest level can still be maintained for 5 decades. The long-term harvest level is 1,450,000 cubic metres per year.

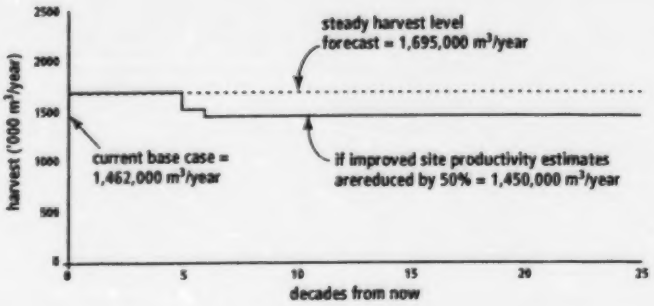


Figure 6. *Uncertainty about site productivity estimates for managed pine stands, Lakes TSA, 2001.*

Implications of changes in the AAC

Environmental Implications

Current forest management follows the standards set out by the Forest Practices Code. These standards are designed to maintain a range of biodiversity and wildlife values. In the Lakes TSA, about 21 per cent of the productive Crown forest is not considered available for timber harvesting and will provide for many environmental values. Forested area both in and outside of the timber harvesting land base will aid in the maintenance of critical forest habitats for many species. Forest cover requirements for biodiversity, visual quality, wildlife habitat, backcountry lakes and recreation areas were included in the analysis.

First Nations Implications

Six First Nations (Burns Lake, Cheslatta Carrier, Nee-Tahi-Buhn, Skin Tyee, W'etsuwet'en and Lake Babine) resident communities are located in the timber supply area with a combined population of approximately 2,500.

Several First Nations have submitted comprehensive land claims covering portions of the timber supply area. Once the treaties have been finalized, they will be considered in the timber supply review.

All of the First Nations have expressed concerns about timber harvesting in areas with high cultural and economic values. Archaeological overview assessments, which identify sites of potential cultural and heritage significance, are underway. Once

impact assessments and traditional-use surveys have been completed, this information will be considered in the timber supply review.

Community Implications

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. The base case forecast for the Lakes TSA suggests the current harvest level of 1.462 million cubic metres per year could be maintained for 11 decades. If the AAC is fully harvested and processed, it can support approximately 1,165 person-years of direct employment across the province and a further 1,370 indirect and induced jobs.

Due to the mountain pine beetle infestation, the AAC may need to be increased to 3.0 million cubic metres for 10 years. This would increase total employment potential to about 2,535 person-years; about 50 per cent of which would be direct forestry jobs.

Your input is needed

Establishing the AAC is an important decision that requires well-informed and thoughtful public input. Feedback is welcomed on any aspect of this discussion paper, the *2001 Lakes TSA Analysis Report* and other issues related to the timber supply in the Lakes TSA. Forest Service staff would be pleased to answer questions or discuss concerns that would help you prepare your response. Please send your comments to the forest district manager at the address below. Your comments will be accepted until April 23, 2001.

You may identify yourself on the response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If the responses are made public, personal identifiers will be removed before the responses are released.

A summary of public comments will be attached to the AAC rationale and will be available from the district office when the chief forester's AAC determination is announced.

Background Information Regarding TSR

The Chief Forester's Responsibility

Determining the allowable annual cuts (AACs) for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses and public input, as well as government's social and economic objectives.

This responsibility is required by legislation in the *Forest Act*, Section 8. It states that the chief forester shall specifically consider the following factors:

1. The rate of timber production that may be sustained from the area, taking into account:
   - the composition of the forest and its expected rate of growth
   - the time that it will take the forest to become re-established
   - silviculture treatments, including reforestation
   - standards of timber utilization
   - constraints on the amount of timber that may be produced due to use of the forest for other purposes.
2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The nature, production capabilities and timber requirements of established and proposed processing facilities.
4. The economic and social objectives of the Crown for the area, region and province—as expressed by the minister of forests.
5. Abnormal insect or disease infestations, and major salvage programs planned for the timber on the area.

Some of these factors can be readily measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forests when determining AACs. In these determinations, the chief forester considers relevant information from all sources.

Lakes Timber Supply Area Timber Supply Review

Information Report Response Form

The Forest Act requires the chief forester to consider the following factors to determine the allowable annual cut for timber supply areas and tree farm licence areas in the province, as follows:

- the rate of timber production that can be sustained from the area;
- the short- and long-term implications to the province of alternative rates of timber harvesting from the area;
- the nature, production capabilities and timber requirements of established and proposed timber processing facilities;
- the economic and social objectives of the Crown for the area, the general region, and the province, as expressed by the minister of forests, and;
- abnormal insect or disease infestations and major salvage programs planned for the area.

We welcome your review to ensure the best available information is considered for the Lakes timber supply area. Please provide your comments on this form, or in another format. Input will be accepted until April 23, 2001.

A. Economic and social objectives

Please use the space below to provide your comments regarding the economic and social information contained in this report or other information that you believe should be considered in determining the AAC for the Lakes timber supply area.

_____

_____

_____

_____

_____

B. The draft data and management assumptions

Please use the space below to provide your comments regarding the draft data and management assumptions contained in this report or other information that you believe should be considered in the determining the AAC for the Lakes timber supply area.

_____

_____

_____

_____

_____

Name (optional): _____

Address (optional): _____

Add an extra sheet if you need more space.

Mail or fax this form to:
B.C. Forest Service, District Manager
Lakes Forest District, Bag 3500
185 Yellowhead Highway
Burns Lake, B.C.
V0J 1E0

Phone: (250) 692-2200 fax: (250) 692-7461
Or electronically mail to Gunter Hoehne@gems7.gov.bc.ca

Visit our website at http://www.for.gov.bc.ca/tsb